

Non-invasive in ovo sexing? Now possible on day 12 and before

Genus Focus for in ovo sexing is meeting the demand to stop the culling of billions of one-day-old male layers. This non-invasive MRI technology identifies the sex of the embryo inside the egg for any breed on day 12 and before.

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Hatchability is not affected, and male embryos remain fully intact, so they can be taken out of the hatching process and used for alternative purposes. This allows hatcheries to focus efforts on hatching the most valuable female fertilised eggs instead, improving overall yield.

How does Genus Focus for in ovo sexing work?

The Genus Focus for in ovo sexing uses AI-powered MRI technology developed by Orbem to scan and classify eggs in a non-invasive (contactless) way.

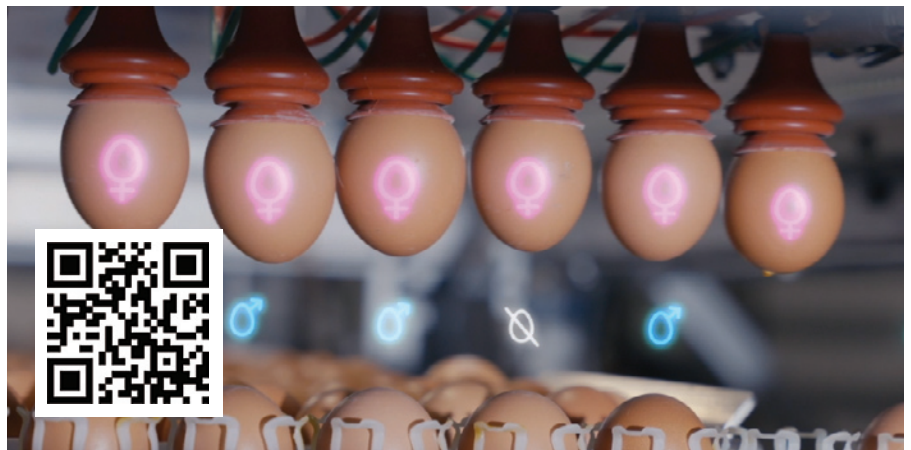
The MRI technology focuses on identifying the anatomical differences between the sexes, separating the males from the female embryos as well as identifying the clear - non-fertilised eggs – or early deaths.

Each Genus Focus for in ovo sexing module can scan 3,000 eggs per hour and is scalable up to eight modules achieving a combined throughput of 24,000 eggs per hour. This way of identifying the sex has no effect on the hatchability rate of the eggs as MRI is used. This is a safe imaging technology which, unlike X-ray or CT, does not emit ionising radiation and therefore does not harm or affect embryo development.

Genus Focus for in ovo sexing is the only non-invasive solution in the market that works across all breeds.

Daily operations

Genus Focus for in ovo sexing is a trolley-to-trolley fully automated solution. It combines the AI and imaging expertise from Orbem



and the Prinzen egg automation equipment from the Vencomatic Group. With gentle egg handling, Prinzen's egg automation carefully transfers the egg trays to the conveyor belt, and then to the single-egg line. The equipment allows the egg to travel safely and smoothly through the MRI scanning process, where the sexing takes place. Once identified, the female eggs are placed carefully in the setter trays. The sexing process is accurate and efficient, as a full trolley with only female eggs can be returned to the incubator within the hour.

Only one operator is needed to manage the complete operation of the Genus Focus for in ovo sexing.

The solution has a modular set-up and can be built to the specification of the hatchery, with just 300m² for an operation of 18,000 eggs/hour.

What happens to the identified males?

Hatching males only to cull them is unethical. Therefore, several markets have put legislation in place and others are working on prohibiting the culling of one-day-old male chicks.

At the same time, the industry clearly knows that raising male chicks is not a sustainable way forward.

The amount of feed and cost involved cannot be justified; it clearly does not have a positive impact on the economic and ecological footprint. Genus Focus for in ovo

sexing is the most sustainable, cost-effective, and animal friendly way to identify male fertilised eggs of any breed and allow those eggs to be repurposed into other industries.

Proof from the field?

Absolutely, there are two operational installations in France, each equipped with two and six modules, respectively. The installations have been in operation since January 2023, fully compliant with French regulatory requirements. They are running with remarkable efficiency, obtaining the satisfaction of the involved hatcheries.

Other hatcheries are already preparing the installation of Genus Focus for in ovo sexing modules, including in ovo sexing according to KAT regulations in the German market.

"The successful launch of in ovo sexing technology in our operations is an important step in our vision to set the standard of sustainable animal breeding. The system delivers a high level of automation and efficiency to ensure that the process can be completed on a large scale in our commercial hatchery.

"The result is a key achievement in animal welfare and overall sustainability in the industry," Gosse Veninga, Director of Product Excellence at Hendrix Genetics, told International Hatchery Practice. ■

www.orbem.ai/solutions-poultry-egg-scanning-classification-sorting